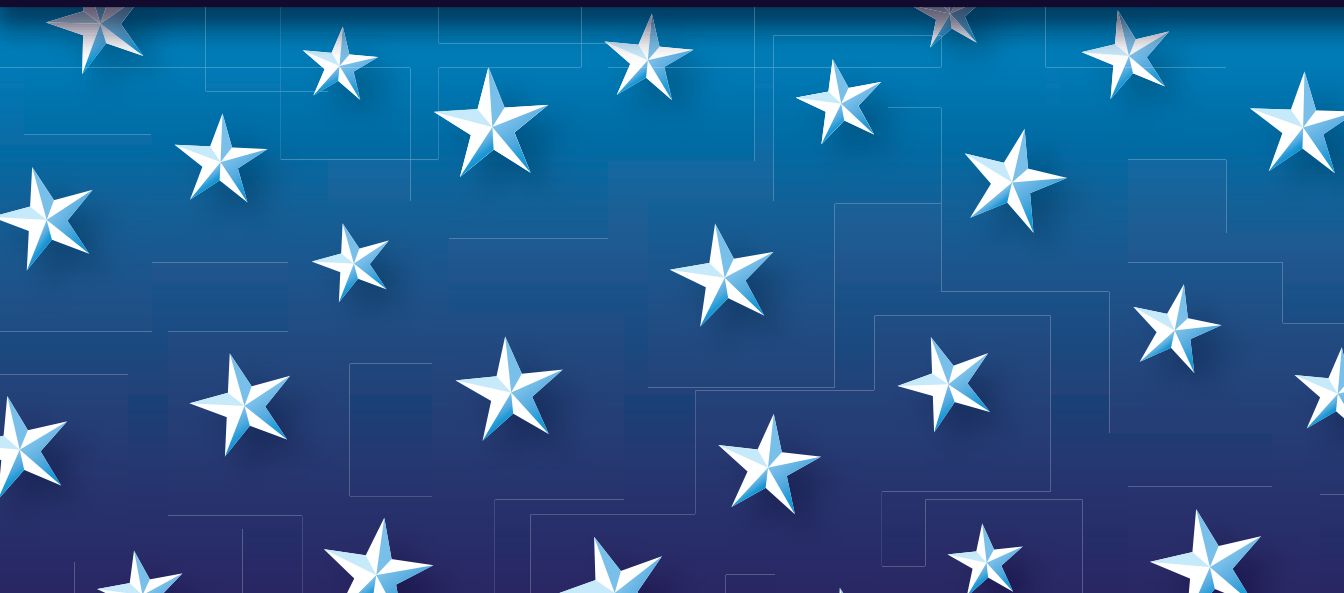
AUTOMATED FLIGHT FOLLOWING

WebTracker™ AFF Manual

for the

United States Department of Agriculture Forest Service



User Guide

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Using This Manual

Webtracker is loaded with powerful features that will make your work easier. To get the most out of this software, please take some time to review this brief guide.

This manual is divided into chapters and includes a Table of Contents, and an Index. If you are looking for general information, check the Table of Contents first.

Support contact information is in the Reference section in the back. Please check the manual and the online help files first.

To use this software, you should be familiar with your computer, it's operating system, and Internet Explorer®. Please refer to the manuals for these products for further information and clarification.

In this manual menus, submenus, and menu items are separated with a ">". For example, in the File menu, the Exit menu item is shown as **File > Exit**.

Notes and tips are highlighted like this.

Cautions and other warnings are highlighted this way.

 Links are shown with this symbol in the Acrobat® and online versions of this manual.

Contents

Overview

WebTracker™ AFF is a computer system developed to allow USDA FS staff to identify, view and monitor exact locations of airborne resources used to fight fires. The system tracks air tanker locations and status and other fire-related information in the form of graphic map displays. Locations can be searched, either by place name, or by latitude and longitude, and displayed on the map.

Background

WebTracker™ has been developed by the British Columbia Forest Service (BCFS) to identify, view and monitor a variety of geographically referenced data. It is based on extensive real-world experience gained from the development and use of an air tanker resource tracking system since 1994. Continuous improvement, based on operation and user feedback, has resulted in a highly reliable tracking system specifically suited to coordinated resource tracking by wildfire fighting organizations.

WebTracker™ AFF's key objectives are:

- Facilitate the dispatch of air tanker resources.
- Reduce costs through efficient use of air tankers.
- Improve safety.

Benefits directly attributable to these systems include:

- Decreased lag time from initial report to air tanker action on the fire.
- For initial attack fires, reduced average size of fire on arrival.
- Increased amount of retardant dropped per flight hour.
- Reduced cost per forest resource damaged.

WebTracker™ AFF is seamlessly scalable to include: tracking of resources such as rotary wing aircraft, vehicles, and fire crews; integrated air tanker requests; incident reporting and tracking; and management of other fire related information such as weather, lightning, and fire data.

A USDA FS air tanker.

To customize WebTracker for the USDA FS, non-flight following specific features (such as Initial Phone Reports, Air Tanker Requests, etc.) have been disabled. Maps have been imported, and the system configured with the appropriate air tanker base information, air tanker resource data, security privileges, and other parameters.

Additionally, specific database components have been selected from the overall BCFS RMS architecture and customized to provide communications

and data management capabilities for the USDA FS AFF system.

These components are already fully integrated with WebTracker™ AFF, and include:

- Broadcast Component: provides real-time broadcast of data to WebTracker™ AFF.
- Data Handling Component: manages the interface between the selected satellite communications link and the databases.
- Database Schema: provides the data structures for the databases.

Mapping Data

Mapping data consists of details such as land, lakes, roads, etc. Mapping data is displayed automatically; the only user interaction required is selecting the types of data and the area of the world to view. All mapping data resides on the web server and is delivered to WebTracker™ AFF automatically. WebTracker™ AFF requests new map images when the selected detail or map view is changed.

Since map images are delivered over the internet, the speed of the internet connection significantly affects the speed of the map refresh.

Icon Overlays

Geographically referenced data is maintained in a database on a central WebTracker™ AFF server. This data may include locations of lightning strikes, airports, wildfires or mobile resources such as water bombers or other vehicles. The database may also contain many other kind of detailed information, including, for example, for a single aircraft: it's type, heading, altitude, airspeed, recent locations or flightpath, and other information.

The power of WebTracker™ AFF is it's ability to quickly coordinate and clearly display, near-infinitely customizable map-based representations of this complex database.

WebTracker™ AFF runs within a browser, and requests information from the server. The server overlays groups of this data on a map and sends it to the WebTracker™ AFF application. WebTracker™ AFF displays the map and a set of symbols, called icons, in a group called an icon overlay.

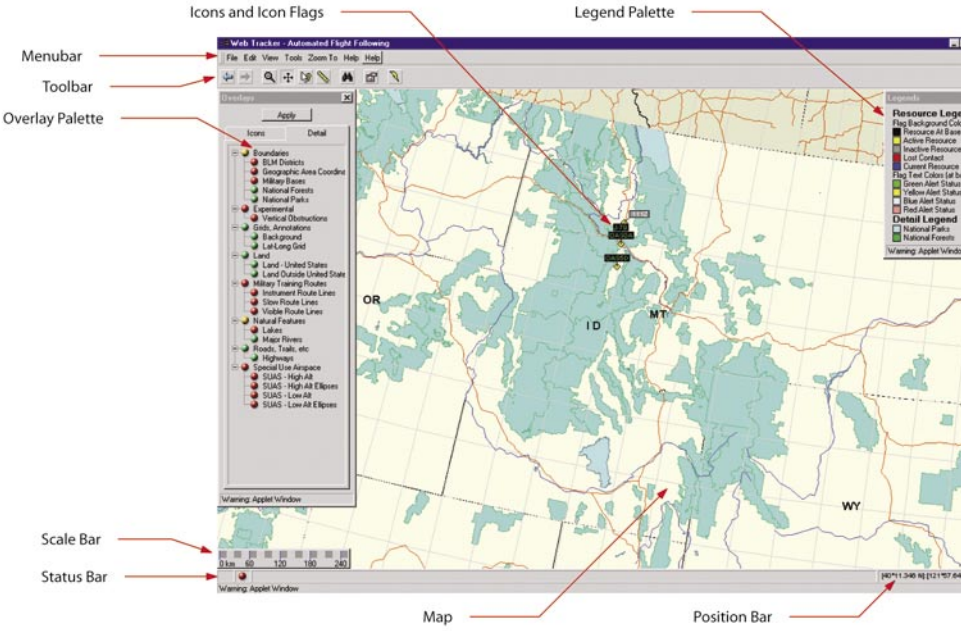
Icon overlays allow for many forms of user interaction. The detail information that is displayed may be easily customized; information for a group of icons may be viewed simultaneously; and in some cases data may be edited or modified.

The icons represent the georeferenced data points such as lightning strikes, airports, aircraft, or wildfires. The characteristics of the icons represent the different types of data points, and usually some details. For example, wildfires may be represented by different sizes and colors of icons depending on their size and intensity.

Detail information is represented by "flags"—small rectangles adjacent to the icons. The flags display detail information about the resources the icons represent through their colors and through alpha-numerical information. For example, a flag may show an aircraft's identification number, owner,

or registration, or all three details. Flags may be easily and quickly customized to show different information.

The combination of dynamic mapping data and customizable icon overlays creates a flexible and powerful automated flight following and mapping system. By customizing each display, it is easy to display just the most useful information.



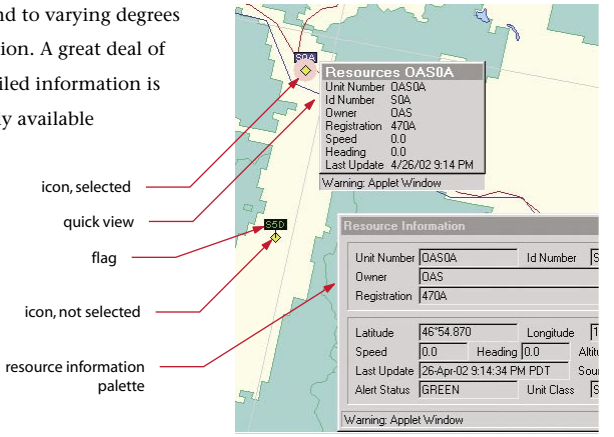
The WebTracker™ AFF main window.

Icon Identification & Overlays

Information associated with an icon is conveyed in several different ways. Listed in order of increasing level of detail, these are:

- The icon color, shape and/or size.
- The icon flag.
- The icon quick view display.
- The icon information palette.

Whenever an icon is visible it represents detail information through its color, shape and/or size. The other methods of displaying detail informationdepend to varying degrees on user interaction. A great deal of very finely detailed information is therefore quickly available at all times.



There are two general categories of icons: standard icons representing airports, cities, and similar features; and "feature" icons, representing more dynamic resources such as aircraft or other vehicles. "Feature" icons present additional information and options in the Icon Properties Dialog Box, the Resource Information Palette, and elsewhere..

Icon Flags

Most icons display a flag containing detail information. Flags are usually but not always displayed. Flags may not be displayed at certain zoom levels, depending on the state and type of icon, or only when forced to display by hovering over an icon. However, icon flags are displayed regardless of the tool selected.

If the Identify tool is selected, then clicking on a group of icons with hidden flags will cause the icons flags to appear briefly.

Moving the mouse over a group of icons without flags and keeping it briefly stationary will also cause the icons flags to appear, much like Windows® tool tips. This works regardless of which tool is selected.

With some kinds of icons it is possible to change the contents of the flag. To set the icon properties: use the Identify tool, and right click on an icon to display a popup menu with items including "Information" and icon Properties. Select the icon properties (for example: "Airport Properties") to bring up the Icon Properties dialog box.

Icon Quick View

All icons have a quick view screen. The quick view contains selected fields of detail data for the icon. It appears when the mouse hovers over the icon.

To Display an Icon's Quick View

- Move the mouse over the icons's flag and keep it stationary for about 1/2 second.
- Move the mouse over a single icon and keep it stationary for about 1/2 second.
- Force an icon to display its flag (described in Icon Flags) and move the mouse over the icon's flag and keep it stationary for about 1/2 second.

  or
- Use the Identify tool to select a group.

Except for group selection with the identify tool, all of the above methods for displaying an icon's quick view will work with any tool.

Icon Actions

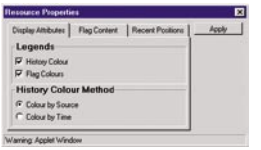
Options may be set for all icons, although there are different options for different types of icons. For some icons it is as simple as displaying a quick view screen—others have a list of available functions. Each icon's functions depend on the type of resource and the state of the icon.

Right clicking on an icon displays a popup menu of all functions available for that icon. If the icon has no flag and is in a group of icons, the flags for all icons in the group will be displayed. Right clicking on an icon's flag always displays the icons' popup menu.

Typical icon actions include "Information", which displays the Icon Information palette if it is not already visible, and "Icon Properties", which opens the associated Icon Properties dialog box.

Icon Properties Dialog Box

Most icons have an associated Icon Properties dialog box. The contents of the dialog box depend on the type of icon.



The Icon Overlay Properties dialog box for a mobile resource.

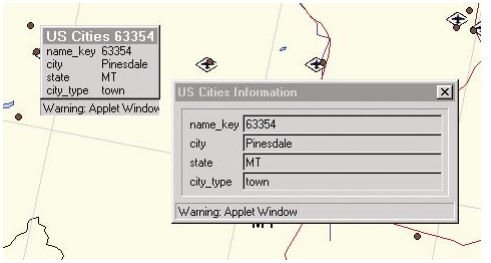
To Show the Icon Properties Dialog Box

Click on the icon name to display the properties dialog box for that icon type.

In general, a properties dialog box contains settings related to the overlay and an Apply button. Pressing the Apply button in the properties dialog box applies the settings for that icon overlay. To update the display, press the Apply button in the Overlay palette.

To Set Icon Display Attributes

When available the Display Attributes pane controls the content of the Legend palette for the particular type of icon. For example, for certain resource icons this pane provides checkboxes for the display of keys in the Legend palette for "History Color" and "Flag Colors", as well as options for the display of history information.



The Icon Properties Dialog Box.

To Change the Display of Flag Content

When available the Flag Content pane controls the display of alphanumeric information in the flags. Click on an item in the list to toggle it on or off. Check or uncheck the "Show Flag" checkbox to control whether or not the flag for that type of icon is displayed.

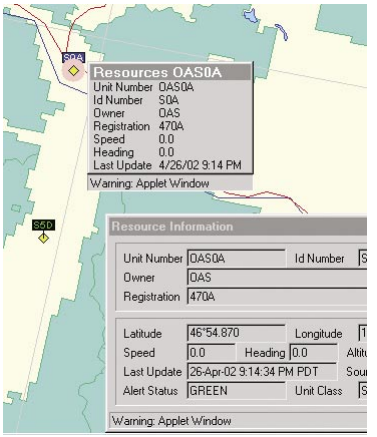
To Change the Display of Recent Positions

When available the Recent Positions pane controls the display of history information resources with this type of associated data. Check or uncheck the "Show Recent Positions" checkbox to control whether or not the flag for that type of icon is displayed.

The display of some types of information may also be controlled through the Icon Information palette.

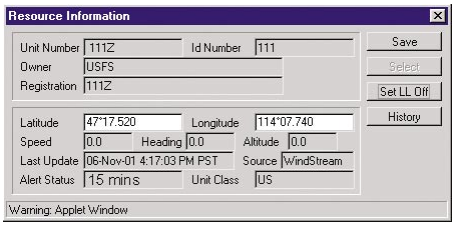
Icon Information Palette

The Icon Information palette changes to dynamically represent available detail data on the selected resource.



The Resource Information Palette.

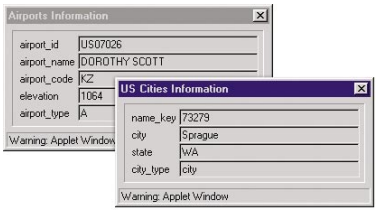
Selecting an icon shows the associated Information palette for that type of icon, or if the Information palette is already visible, then it is updated to show the detail information for that icon.



The Icon Information palette showing detail information for the currently selected icon—in this case a mobile resource.

For example, selecting an aircraft's icon brings up the Resource Information palette, and shows the aircraft's detail information, including the Unit Number, ID Number, Owner, Registration, and so on. If the Resource Information palette is already visible, then the display changes to show the detail information for the recently selected aircraft.

There are multiple instances of the Information palette for different sets of icons. For example, there are Information palettes for resources, airports, US Cities, Canadian Cities, and more. Detail data for all mobile resources is displayed in the "Resource Information" palette (see the illustration above), while detail data for airports is displayed in the "Airports Information" palette, and detail data for US Cities is displayed in the "US Cities Information" palette, as shown below.



The US Cities Information palette and the Airport Information palette.

Some Information palettes may allow manual (user) input. For example, the Resource Information palette for aircraft allows the user to update the position of an aircraft manually by setting the latitude and longitude directly in the palette.

To Set the Position of a Resource Manually

1 Click the "Set Lat/Long" button.

2 Enter the new latitude and longitude by typing in the corresponding fields, or click on the map to select a new location. (Note that the format is degrees, minutes and seconds.)

3 Click the "Save" button.

To cancel without saving changes, close the Resource Information palette, and choose "No" from the confirmation dialog box.

To Show the History of a Resource

1 Click the "View History" checkbox in the Icon Information palette to open the History dialog box.

2 Use the "Start" and "End" calendars to choose dates, and enter the time (in 24 hour format). Or click the "Last 60 min" button to automatically enter the times to display the last 60 minutes of history.

3 Optionally, reset the maximum number of data points to display by entering a new amount in the "Maximum History Records" box, or leave it as the default amount.

3 Click the "OK" button for the new settings to take effect.

The Resource Information Palette showing the History dialog box.

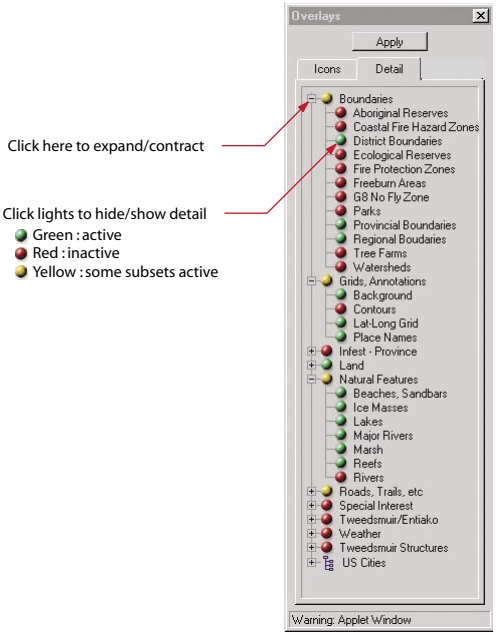
The Overlay Palette

The Overlays palette is the main control used for changing map detail and enabling or disabling icon overlays. Display the Overlays palette by pressing the Icon Overlays button in the tool bar or selecting **View > Overlays.**

The Overlays palette contains two panes: "Icons" contains icon overlay options, and "Detail" which controls the display of map details.

Detail Tab of Overlay Palette

The detail tab allows controls the display of levels of mapping detail. The contents of the detail tab depend on the current map set being displayed.



The Detail Tab of the Overlay Palette

Each level of map detail and each icon overlay are represented in the Overlays palette as a light followed by the name of the map detail or icon overlay. In many cases, the items are grouped together or divided into subsets and displayed in a tree fashion. For example the Mobile Resources overlay is divided into FWB, FWT, OTH and RWR with FWB, FWT, OTH, and RWR appearing as branches of Mobile Resources.

To Expand / Collapse Views of Sub-Items in the Overlay Palette

If there is a box to the left of the light, the item contains sub-items. In the Overlays palette figure, all items contain sub items. A sub-item can also contain sub-items. For example: the Fixed Resources group may contain a sub-item Weather Stations which contains sub-items.

Items with a minus sign are expanded with sub-items displaying, items with a plus sign are collapsed. Clicking on the box or the item name expands or contracts the items.

To Hide / Show Items Using the Overlay Palette

Click on the light beside the icon overlay to toggle the display state of the item—in other words hide or show the item. If the icon overlay is a group name (i.e. Mobile Resources), all sub-items are toggled as well.

To apply the changes, press the Apply button at the top of the palette.

Viewing Reports

In version 2 and later of the WebTracker™ AFF software, in some cases, reports are associated with an item group in the Overlays dialog box.

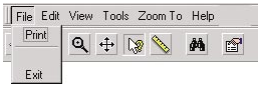
A report is represented by a report icon with the name of the report beside the icon. To display the report, click on the report name. In some cases, the report is available in HTML format. If so, an HTML button will appear in the report-viewing screen. Pressing the HTML button displays the report in a separate Internet Explorer window.

The Menus

The Menu Bar

The menu bar is a standard Windows® menu, and appears in the usual upper left location, above the tool bar.

The File Menu



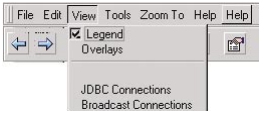
File > Print Prints the currently displayed map and icons. Note: the print function is quite limited in all current versions.

File > Exit Quits WebTracker™ AFF.

The Edit Menu

The features available in the edit menu are made available dynamically depending on feature access settings; these features are not available in version 1 of Webtracker™ AFF.

The View Menu

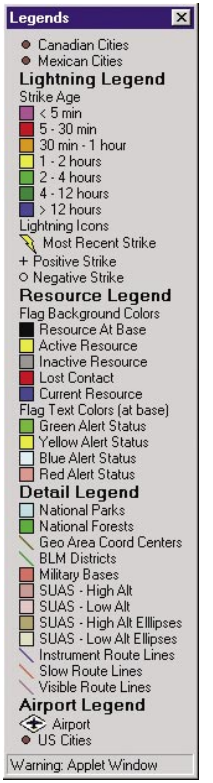


This menu contains various control and status palettes and dialog boxes.

The Legend Palette

View > Legend The legend displays in the top right corner of the map and contains brief descriptions of the currently displaying icons. Its contents vary dynamically depending on what icon overlays are enabled.

The legend also displays descriptions of the active map details (roads, lakes, boundaries, etc.); these also update dynamically.



The Legend Palette, showing many of the possible keys.

View - Overlays Displays the Overlays palette, including the Icon and Detail tabs.

See Overlays Palette for a description.

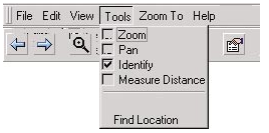
View > JDBC Connections Displays the JDBC Connections dialog box.

See JDBC Connections for a description.

View > Broadcasts Displays the Broadcast Connections dialog box.

See Broadcast Connections for a description.

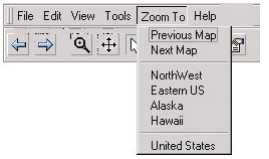
The Tools Menu



Contains various tools for navigating, finding and selecting items on the map.

See the Tool bar section for details.

The Zoom To Menu



The Zoom To menu contains several pre-defined map views as well as “Previous Map” and “Next Map” functions.

Zoom To > Previous Map and **Zoom To > Next Map** Each time a new map view is displayed as a result of zooming or panning, it is added to an internal list of views. The Previous Map and Next Map functions allow you to navigate this internal list of map views, much like the forward and back buttons of a browser.

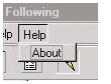
A map view includes the dimensions of the map, the location, and the zoom level. It does not include map detail or which icon overlays are displaying.

The Previous Map / Next Map functions are also available on the tool bar in the form of the arrow buttons.

See also the Tool bar section.

Zoom To > Location Zooms directly to the selected location (for example: Northwest, Eastern US, Alaska, Hawaii). This does not affect the currently displayed map detail or icon overlays—it only recenters the map view on a new area.

The Help Menu



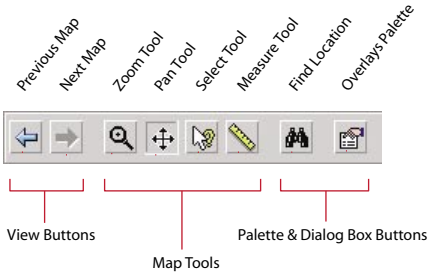
Help > Online Help Opens a separate browser window for online help files, if available.

Help > About Displays the current version of WebTracker™ AFF and the Java Virtual Machine.

See Java Virtual Machine for important information.

The Tool Bar

The tool bar is located at the top of the application and below the main menu and contains three types of buttons.



The tool bar contains three types of buttons:

Navigation Buttons - Allow navigating through the list of displayed maps.

See Zoom To - Previous Map / Next Map.

Mapping Tools - Various tools for changing the current map view and selecting icons.

See Mapping Tools.

Control Palettes and Dialog Box Buttons

- Displays palettes and dialog boxes used for changing the map detail and icons displayed.

See the Overlay Palette.

Each tool bar item also has a tooltip associated with it. To see the tooltip, move the mouse over the button and pause briefly.

The Zoom Tool

The zoom tool allows you to zoom in or out on the map. Clicking the magnifying glass button in the tool bar or choose **Tools > Zoom** selects the zoom tool. Once enabled, the cursor changes into a magnifying glass when over the map.

Use the Zoom tool to increase the level of detail.

To Zoom In

- Left click the mouse in the map area to zoom in or
- Left click and drag to define the area to zoom in.

To Zoom Out

Right click the mouse on the map.

The Scale Bar shows always shows the current map scale at any zoom level.

The Pan Tool

Pan mode allows you to drag the map to a different area.

To Pan (Move the Map Without Zooming)

Select the move tool in the tool bar or use **Tools > Pan**. Left click and drag, move the map to the desired location, and release the mouse button.

The map will redraw within a few seconds.

The mouse button must be pressed for at least 1/2 second or the program assumes panning was not the intended action and automatically aborts the move.

To abort manually, press the right mouse button before releasing the left mouse button.

The Identify Tool

The Identify tool allows you to identify points on the map, identify icons, or select icons. Pressing the identify button in the tool bar or selecting **Tools > Identify** selects this tool.

Icons can be selected individually or as a group. Once an icon is selected, its associated information palette is displayed.

To Select an Individual Icon

- Left click on the icon's flag.
- Left click on an individual icon.
  or
- Left click on a group of icons to force their flags to appear and left click on a flag.

Individual icon selection only works when the Identify tool is selected.

To Select Multiple Icons

1 Press the left mouse button and press and drag a blue bounding box.

2 Release the mouse button to temporarily select all icons within the box. The group selection popup menu for all the icons will appear.

3 Rolling over the icon name in the popup will highlight the corresponding icon and a Quick View Box will appear adjacent to the popup menu.

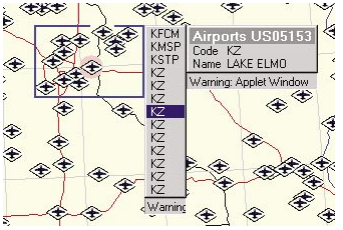
4 Optionally, click on an item in the popup menu to select it.

To Hide the Group Selection Popup

1 Using the Identify tool, select an item from the popup.

2 Click anywhere, or move the mouse off the menu and wait briefly.

Group selection does not operate on lightning icons (when available and active).



Group Icon Selection

The Measure Distance Tool

The measure distance tool allows measuring the distance, true north bearing, and magnetic north bearing, between any two points on the map. It also allows the selection of multiple points, measuring the distance of the entire line, and the bearing between start and end points.

Pressing the Measure too button in the tool bar or selecting **Tools > Measure Distanc**e from the menu selects the measure distance tool. Once selected, the cursor changes into a ruler when over the map.

Basic Measurement

Basic measuring: left click a series of points.

1 While the Measurement tool is selected, left click the mouse at the start point then left click the next point. The distance and bearing display in the Status Bar is updated automatically.

2 Left clicking again adds a point to the existing line. Any number of points can be added to the line. When multiple points exist in a line, the bear-

ing refers to the bearing from the start point to the last point in the line.

To Erase a Line

Right clicking the mouse while the Measurement tool is selected erases the measurement line.

To Restore an Erased Line

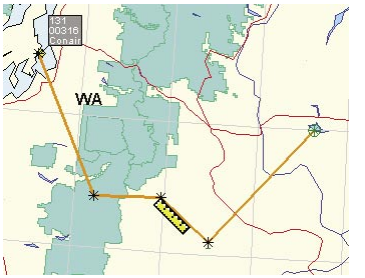
If a new line has not been started, and a measurement line is accidentally erased, right clicking the mouse a second time can restore it.

To Insert a Point

1 Select the line segment. Left clicking on the first point in the segment selects the segment. If done correctly, both points in the segment will turn green. For example: to select the segment between point 2 and point 3, left click on point 2. Point 2 and point 3 should turn green.

Select a line segment by left clicking on the first point in the segment.

2 Insert the point. Left clicking on the map inserts a point in between the two points selected.



Left click while a segment is selected to insert a point.

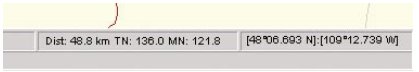
To Remove a Point

Right clicking on any point in the line segment removes that point from the measurement line. Be careful to right click exactly on the point as right clicking on the map erases the entire line. If the line is accidentally erased, right clicking the mouse a second time restores it.

Right click on a selected point to erase it.

Distance and Bearing Bar

The Distance and Bearing Bar appears next to the Position Bar in the Status Bar at the bottom of the screen. The display is updated as the measurement line is modified.



The Distance and Bearing Bar, next to the Position Bar.

The fields in the display are:

Dist: Distance in kilometers of entire line.

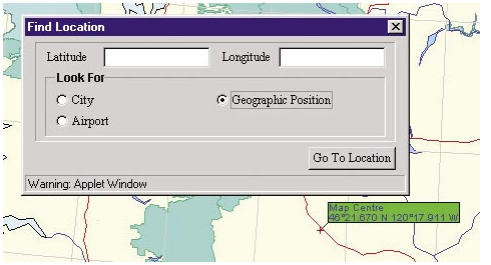
TN: True north bearing from start point to last point in segment.

MN: Magnetic north bearing from start point to last point in segment.

The Position Bar also shows the latitude and longitude of the mouse cursor when measuring.

Find Location

Click the find button in the tool bar to open the Find Location dialog box.



The Find Location dialog box in Geographic Position mode.

To Search for a Geographic Position

1 Select the "Geographic Position" button. The entry fields will change.

2 Enter the latitude and longitude of the location to find. Note that the format is degrees, minutes and seconds.

3 Press the "Go To Location" button. Find Location will disappear, and the map will redraw with the highlighted location, including a display of coordinates.

The geographic center of the current view is highlighted when Find Location is in Geographic Position mode.

To Search for a City or Airport Location

1 Enter a search string in the top entry field, for example, “Boise”.

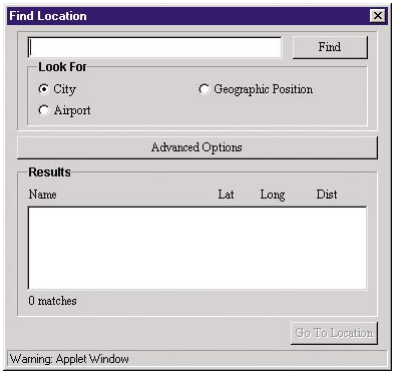
2 Select the type of location to search for by clicking the radio buttons, for example “City” or “Airport”.

3 Click the “Find” button.

Results are displayed in the field below. The number of matches is displayed below the Results field.

Single-click on a location in the results list to highlight it on the map.

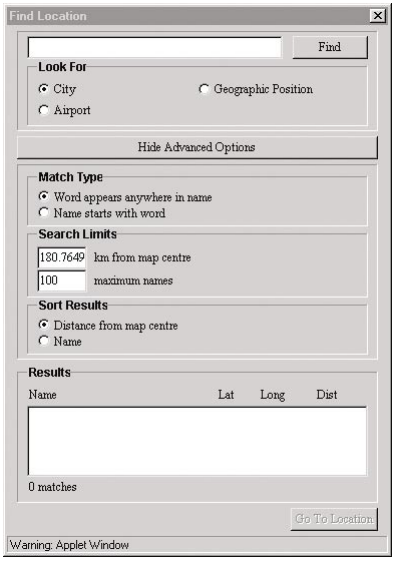
Double-click on a location in the list to highlight it and to force the map to pan to that location. The map will be centered on the location.



The Find Location dialog box.

To Use Advanced Search Options

Click the “Advanced Options” button to expand the dialog box for more search options.



Advanced Options in the Find Location dialog box.

Match Type controls the way the search string is used.

Search Limits controls the geographic limitations of the search. The first value controls the radius of the search, and the second value controls the number of results that may be returned. The default distance is set according to the zoom level; to search only the area that is currently displayed, use the default value.

Sort Results controls the display of the results.

The Status Bar & Connection Dialog Boxes

There are several ways to view supplemental information, including the Status Bar at the bottom of the main window, and a number of different information dialog boxes. All of these features may be controlled through the Status Bar itself.

The Status Bar

The Status Bar appears at the bottom of the application window and contains various status controls and messages. The contents of the Status Bar are dependent upon the overlays that are displaying.

Many of the status controls have an associated dialog box or alternate view. Clicking on the Status Bar displays this.

Note that a progress bar is displayed in the center of the Status Bar, to show the downloading of the most recently requested map.

The Status Bar, with the Map Scale above.

Position Bar

The Position Bar appears on the right hand side of the Status Bar, to the right of the Distance and Bearing Bar when it is displayed. It displays the latitude and longitude of the current mouse position.

The Position Bar can display the position in three different formats:

- Degrees, minutes and seconds (the default).
- Decimal degrees.
- Degrees and decimal minutes.

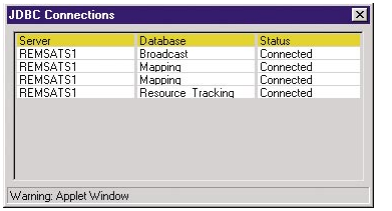
To toggle between these display modes click on the Position Bar

The Position Bar.

JDBC Connections

WebTracker™ AFF connects to several databases on the WebTracker™ AFF server using a technology called Java DataBase Connectivity (JDBC).

The JDBC Connections dialog box displays all current JDBC connections. Selecting **View > JDBC Connections** from the main menu displays this dialog box.



JDBC Connections Dialog Box

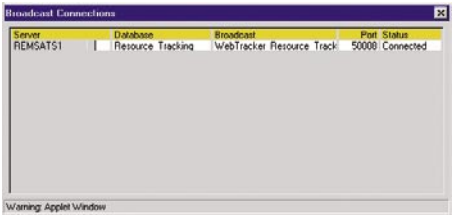
Broadcast Connections

WebTracker™ AFF updates some icon overlays in real-time through the use of database broadcasts. A database broadcast is a connection over the internet to a database broadcast server. Broadcasts are small messages from the database sent whenever a record is changed and are only sent for records that require real-time updates in WebTracker™ AFF.

WebTracker™ AFF establishes broadcast connections as needed, and discontinues the connection when no longer required. For example: enabling the Mobile Resources icon overlay establishes a broadcast connection with the Resource Tracking broadcast. Broadcasts will automatically reconnect if the connection is lost or left idle. In the event the broadcast connection cannot be reestablished, WebTracker™ AFF reverts to a listening mode to retrieve any missing broadcasts.

Broadcast connections and their status can be viewed with the Broadcast Connections dialog box. Selecting **View > Broadcast Connections** from the main menu displays this dialog box.

Double clicking on a broadcast name displays recent broadcast activity.



Broadcast Connections Dialog Box

Recent Broadcast Activity

For information on broadcasts see Overview - Icon Overlays, or Broadcast Connections.

When a connection is made to a broadcast, a status light is added to the bottom right of the Status Bar. The status light indicates the status of the broadcast as follows:

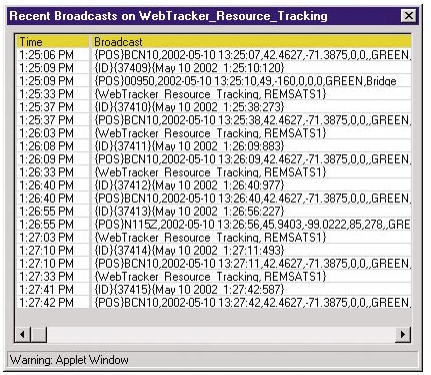
Broadcast is connected and active.

Broadcast is receiving data.

Broadcast is not connected, indicating a problem with the broadcast.

Moving the mouse over the broadcast light displays a tool tip with the name of the broadcast and the status.

Clicking on the broadcast light or double clicking on the broadcast name in the Broadcast Connection dialog box displays the Recent Broadcasts dialog box.



Recent Broadcasts Dialog Box

The recent broadcasts dialog box is updated as broadcasts are received by WebTracker™ AFF.

See also:

the Overlay Palette

the Legend Palette

the Resource Information Palette

the Icon Identification Dialog Box

the Find Tool

the Distance and Bearing Display

Reference

System Requirements

- Standard PC computer
- Internet Explorer® 4 or later
- Internet Explorer®'s JVM (Java Virtual Machine)
- internet connection (56 kbps or faster recommended)

User Access

Visit **http://www.affnifc.gov** to access WebTracker™ AFF. A username and password will be required. If you do not have a username, have forgotten your password, or require other assistance contact your local WebTracker™ AFF administrator, or check the above web site for more information.

Access Speed and Performance

Since icon overlays are retrieved over the internet, the access speed of the internet connection affects data retrieval speed. In general, icon overlay data is much more succinct than mapping data, so connection speed has less of an effect on icon overlay retrieval and display.

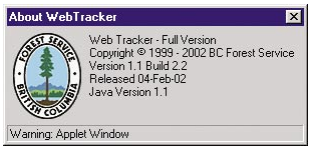
Some icon overlays are updated in real-time using a broadcast technology. For example: if lightning tracking is enabled, then lightning strikes are plotted in WebTracker™ AFF the moment the strike data is inserted into the lightning database.

See also Broadcast Connections.

Java Virtual Machine

The Java Virtual Machine (JVM) is a component of Internet Explorer® and is used to run WebTracker™ AFF. As there are different versions of Internet Explorer®, there are many different versions of the JVM. Older versions may cause unusual behavior in WebTracker™ (i.e. the "April Bug"). Furthermore, there are known serious security flaws in some older JVM's that can be exploited by simply browsing an unsafe web site. This is a flaw in the JVM and is unrelated to WebTracker™.

At the publication of this document the latest version of Microsoft®'s JVM is 1.1.4 build 3802, released January 25, 2001. The Java version number can be determined in WebTracker™ AFF by choosing **Help > About** to show the "About WebTracker" dialog box. The last line in the dialog box shows the Java version, which should be at least 1.1.4.



The "About" window, showing current version of the JVM.

WebTracker™ will run with older versions of the JVM but it is strongly recommended the latest version be used. Instructions for updating the JVM can be found at http://www.microsoft.com/java/vm/dl_vm40.htm

User Support

For support, please visit **http://www.affnifc.gov** and access the help and support features listed there.

For further support, including user identification, new and lost passwords, bug reports, and other issues not addressed by the web site or this guide, users should contact their local WebTracker™ AFF administrator.

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